



SECTION IV
MAINTENANCE



HYDRAULIC FLUIDS and GREASES

The life-blood of the breaker is the hydraulic oil. In order to maintain peak performance from the breaker, it is essential to use the correct oil as well as maintain a clean hydraulic system.

SELECTION OF HYDRAULIC OIL

To select the proper oil, refer to the following table:

MANUFACTURER	ISO VG 68 (HOT WEATHER)	ISO VG 46 (COLD WEATHER)	(EXTREME COLD)
SHELL	TELLUS OIL 56	TELLUS OIL 46	
ESSO	NUTO H68	NUTO H46	
MOBIL	DTE 26	DTE 25	DTE 13

**** NOTE: IF A PHOSPHATE ESTHER FLUID IS USED, SPECIAL SEALS ARE REQUIRED. CONSULT YOUR KENT REPRESENTATIVE.**

HYDRAULIC OIL CONTAMINATION

Oil contamination can result in malfunctions and unsatisfactory performance of both the hydraulic breaker and the base machine. Special attention must be paid to the hydraulic system. The base machine's hydraulic system may become contaminated faster when using a breaker than when using a bucket or other attachment. The following guidelines should be followed when using a hydraulic breaker:

- When installing the breaker onto a machine for the first time, drain the base machine's hydraulic system completely. Flush the reservoir, cylinders and piping as thoroughly as possible. Replace the main line oil filter cartridge. Add new hydraulic oil. If the base machine is brand new, this step may be omitted.
- The main return filter element should be replaced after the first 50 hours of operation, and every 125 hours thereafter.
- Change the hydraulic oil after the first 250 hours of operation, and every 600 hours thereafter, or sooner in accordance with the carrier manufacturers specifications.
- Oil contamination should be kept to ANAS NO.9 class.

Field determination of contamination is as follows:

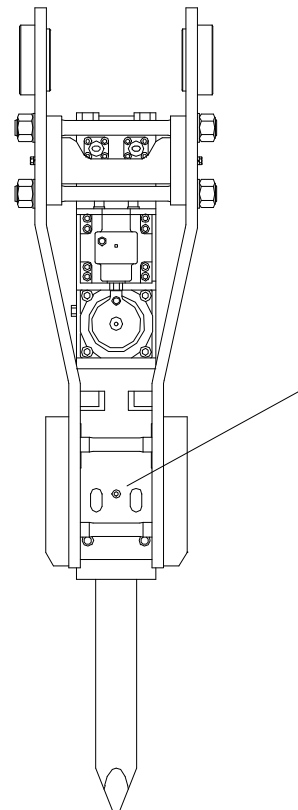
Place a sample of the base machine's hydraulic oil in a transparent container. Also place a sample of unused oil in another transparent container. Compare the two containers. If there is a visual difference in the color, the base machine's oil is presumed to be contaminated.

GREASE

Kent's KHB "G" SERIES SUPER II hydraulic breakers are equipped with grease fittings. These fittings are located on the side of the fronthead, down by the working steel (refer to the illustration below). Lack of lubrication can cause failure of the working steel, piston or shorten the life of the seals. An NLGI NO.2 grease is recommended. The following is a list of the recommended greases:

SHELL ALVANIA EP2
ESSO LITHTAN EP2
MOBIL MOBILPLEX 48

- The fronthead should be lubricated every 2 - 3 hours of operation. Grease more frequently, if needed, but do not over-load the tool with grease.
- When greasing the hammer, hold it in an upright, vertical, position, being sure that the working steel is fully engaged into the chuck.
- Avoid getting rock or cement chips into the fronthead when replacing working steels. Particles which may have adhered to the grease can cause scratches and scaring inside the hammer.



Location of
Grease Fitting



VALVE ADJUSTER **KHB "G" SERIES SUPER II**

Function

The valve adjuster will vary the amount of oil passing thru the hydraulic breaker. The correct adjustment of this valve is necessary to maintain the proper hydraulic oil pressure for maximum operating efficiency. The chart on the next page shows the relationship between the valve adjuster and the flow rate.

Adjustment Procedure

The valve should be adjusted during the initial breaker installation, or any time the breaker is placed on a different base machine.

A flow test must be done on the base machine to determine the amount of oil available to the breaker at the maximum recommended pressure. Once the test has been performed, one of the two following scenarios will exist.

- **If the oil flow is equal to or greater than the maximum flow capacity of the breaker, then follow the adjustment procedure below:**

STEP 1 Loosen the locknut which holds the valve adjuster in place.

STEP 2 Using the proper allen wrench (supplied in the tool box), turn the valve adjuster clockwise until it is fully seated.

STEP 3 Consult the chart on the next page to determine the correct settings for your hammer. Turn the valve adjuster counter-clockwise to the maximum number of turns for that hammer.

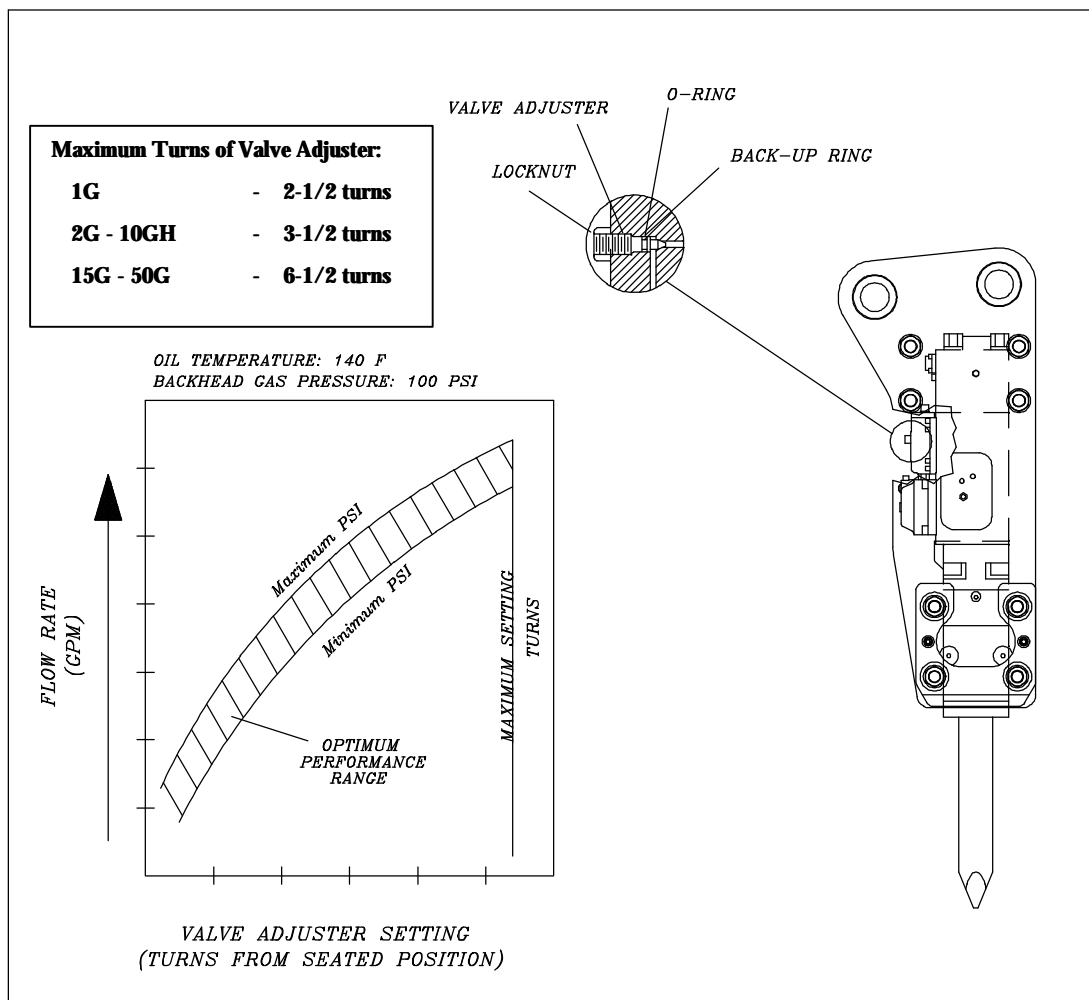
STEP 4 Tighten the locknut while holding the valve adjuster in place.

- **If the oil flow is less than the maximum flow capacity of the breaker, then follow the adjustment procedure below:**

STEP 1 Follow steps 1 thru 4 from above to set the valve adjuster to its maximum flow.

STEP 2 Attach the breaker to the base machine.
(Refer to the "MOUNTING PROCEDURE" section of this manual.)

- STEP 3** Install a pressure gage in the pressure line going to the breaker.
- STEP 4** Place the breaker in a vertical position on a solid object, such as a steel plate.
- STEP 5** Operate the breaker long enough to get an accurate pressure reading.
- STEP 6** If the pressure reading is less than the minimum operating pressure of the breaker, turn the valve adjuster clockwise 1/2 turn. Make sure to tighten the locknut after the adjustment has been made.
- STEP 7** Repeat steps 5 and 6 until the pressure is within the operating pressure range specified for that hammer.

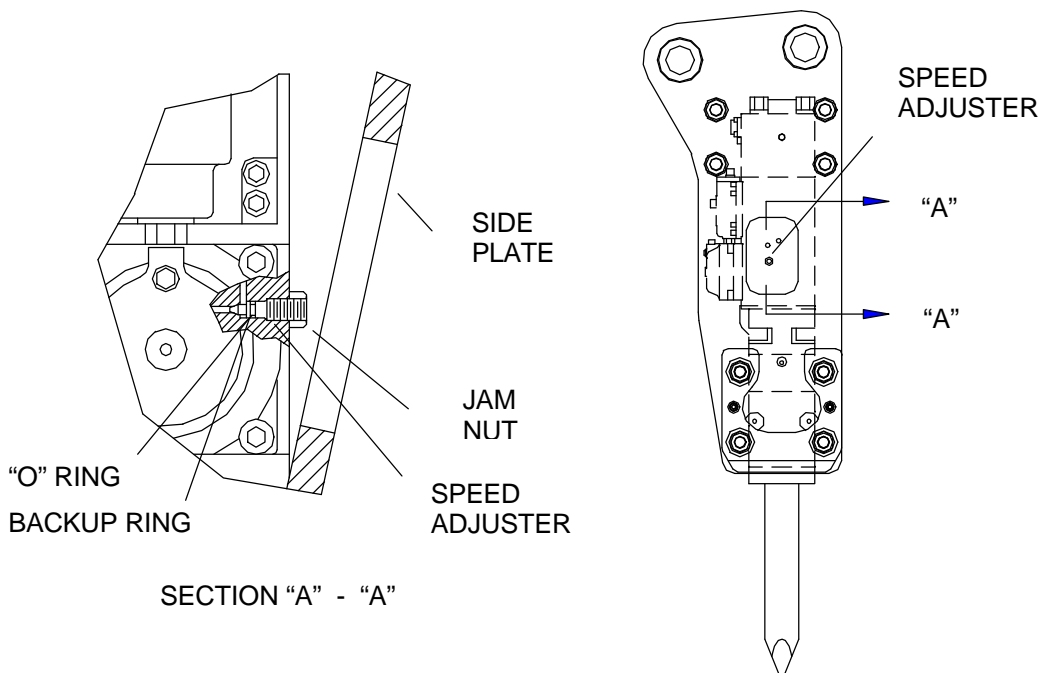




BLOW FREQUENCY ADJUSTER

Kent's large KHB "G" SERIES SUPER II Hydraulic Breakers, models KHB10G through KHB50G, are equipped with a blow frequency adjuster, which allows them to be fine tuned to the work at hand. The blow frequency adjuster allows the hammer to be set anywhere from its full, long stroke and speed, to half stroke and double speed.

The blow frequency adjuster controls the length of the stroke and the power output of the piston. EXAMPLE: By doubling the speed of the breaker, the energy output is cut in half. However the energy output per minute remains the same. Therefore, it is recommended that a slower speed with maximum hitting power be used for harder materials, where a faster speed with less hitting power be used for softer material.



To adjust the number of blows per minute, loosen the jam nut (refer to the illustration) and turn the adjuster clockwise until it is fully seated. The breaker is now hitting at its slowest speed. Turning the adjuster two (2) full turns counter-clockwise, sets the breaker at its fastest speed. **DO NOT TURN THE ADJUSTER MORE THAN TWO (2) FULL TURNS FROM ITS SEATED POSITION OR IT MAY BLOW OUT OF THE BREAKER CAUSING INJURY OR DEATH TO ANYONE IN THE VICINITY!** After choosing the correct speed for the application, hold the adjuster in place with an allen wrench while tightening the jam nut securely.



ACCUMULATOR **CHARGING PROCEDURE**



To receive the optimum performance from the hydraulic breaker, care must be taken to maintain the proper nitrogen charge in the accumulator of the breaker. To assist with this, Kent can supply a charge kit as illustrated on the opposite page.

The following is a step-by-step procedure that should be used to properly charge the accumulator. (Note: These instructions are written for Kent's charge kit. If you are not using Kent's charge kit, use the same procedure only disregard the reference to item numbers.

STEP 1 The breaker should be charged at ambient temperature (not operated).

STEP 2 The customer must supply a nitrogen tank complete with a regulator.



USE EXTREME CAUTION WHEN HANDLING PRESSURIZED VESSELS!!

STEP 3 Connect hose assembly (15) to the regulator on your nitrogen tank.

STEP 4 Turn shut-off valve (12) clockwise until completely closed.

STEP 5 Connect the 0-1000 PSI pressure gage (10) and Q.D. coupler (9) to the Q.D. nipple (8).

STEP 6 Adjust your regulator to its lowest setting before opening the valve on your nitrogen tank. Open the valve on your tank and adjust your regulator to the appropriate accumulator charge.

(Refer to the table shown on the following page to select the appropriate charge.)

STEP 7 Remove the external plug located in the accumulator charge port on top the accumulator. Screw charge adapter (3) with O-ring (4) into the charge port.

STEP 8 Attach hose assembly (5) to charge adapter (3).

STEP 9 Remove the existing hex cap and O-ring from the side of the accumulator charging port. Insert a screwdriver into the slot of the now visible screw and turn counter-clockwise approximately one turn.

STEP 10 Open shut-off valve (12) to allow the gas to enter the accumulator chamber.

STEP 11 Wait about 15 seconds. The pressure reading on gage (10) should now be correct. If the reading is not the proper charging pressure as shown in the table, adjust your regulator accordingly. Once the correct pressure reading is achieved, turn the shut-off valve (12) clockwise until it is fully closed.

STEP 12 Re-insert screwdriver into the side of the charging port and turn the screw clockwise until it is fully seated. Replace the hex cap and O-ring.

STEP 13 Remove charge adapter (3) from the charge port.

STEP 14 Re-install the plug into the charge port.



BACKHEAD CHARGING **PROCEDURE**

To receive the optimum performance from the hydraulic breaker, care must be taken to maintain the proper nitrogen charge in the backhead of the breaker. To assist with this, Kent can supply a charge kit as illustrated on the opposite page.

The following is a step-by-step procedure that should be used to properly charge the backhead. (Note: These instructions are written for Kent's charge kit. If you are not using Kent's charge kit, use the same procedure only disregard the reference to item numbers.

STEP 1 The breaker should be charged at ambient temperature (not operated) and in a horizontal position with the working steel all the way out.

STEP 2 The customer must supply a nitrogen tank complete with a regulator.



USE EXTREME CAUTION WHEN HANDLING PRESSURIZED VESSELS!!

STEP 3 Attach charge adapter (1) to swivel elbow (18). Be sure that O-ring (2) is installed on charge adapter (1). The charge kit is shipped partially assembled. Assemble as shown in the illustration. A charge adapter (1) and O-ring (2) can also be found in the tool box included with the hammer.

STEP 4 Connect hose assembly (15) to the regulator on your nitrogen tank.

STEP 5 Turn shut-off valve (12) clockwise until it is completely closed.

STEP 6 Connect the 0 - 200 PSI pressure gage (11) and Q.D. coupler (9), to the Q.D. nipple (8).

STEP 7 Adjust your regulator to its lowest setting before opening the valve on your nitrogen tank. Open the valve on your tank and adjust your regulator to the appropriate backhead charge.

(Refer to the table shown on the opposite page to select the appropriate charge.)

STEP 8 Remove the external plug located in the backhead charge port.

STEP 9 Insert the charge adapter (1) into the charge port. Push the charge adapter (1) into the charge port until it is fully seated. It will be necessary to hold the charge adapter in place until charging is completed.

STEP 10 Open shut-off valve (12) to allow the gas to enter the backhead chamber.

STEP 11 Wait about 15 seconds while holding the charge adapter (1) into the charge port. The pressure reading on gage (11) should now be correct. If the reading is not the proper charge pressure as shown in the table, adjust your regulator accordingly.

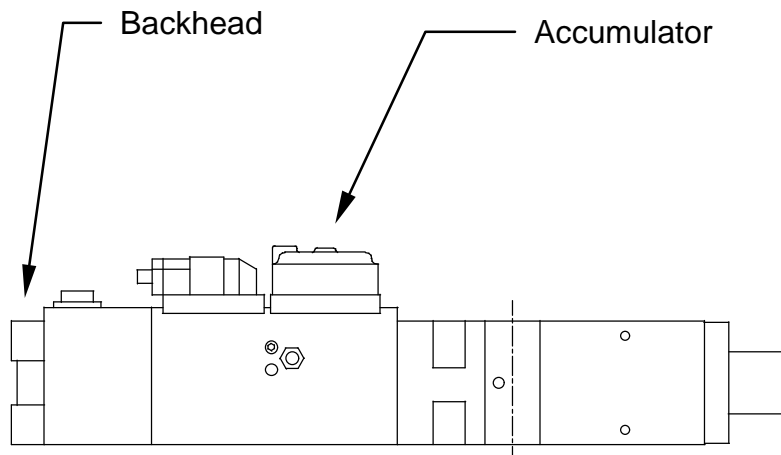
STEP 12 Once the correct pressure reading is achieved, turn the shut-off valve (12) clockwise until it is fully closed.

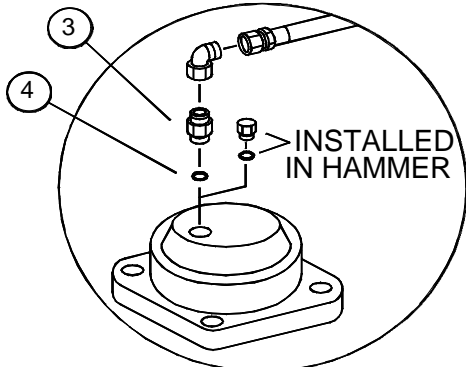
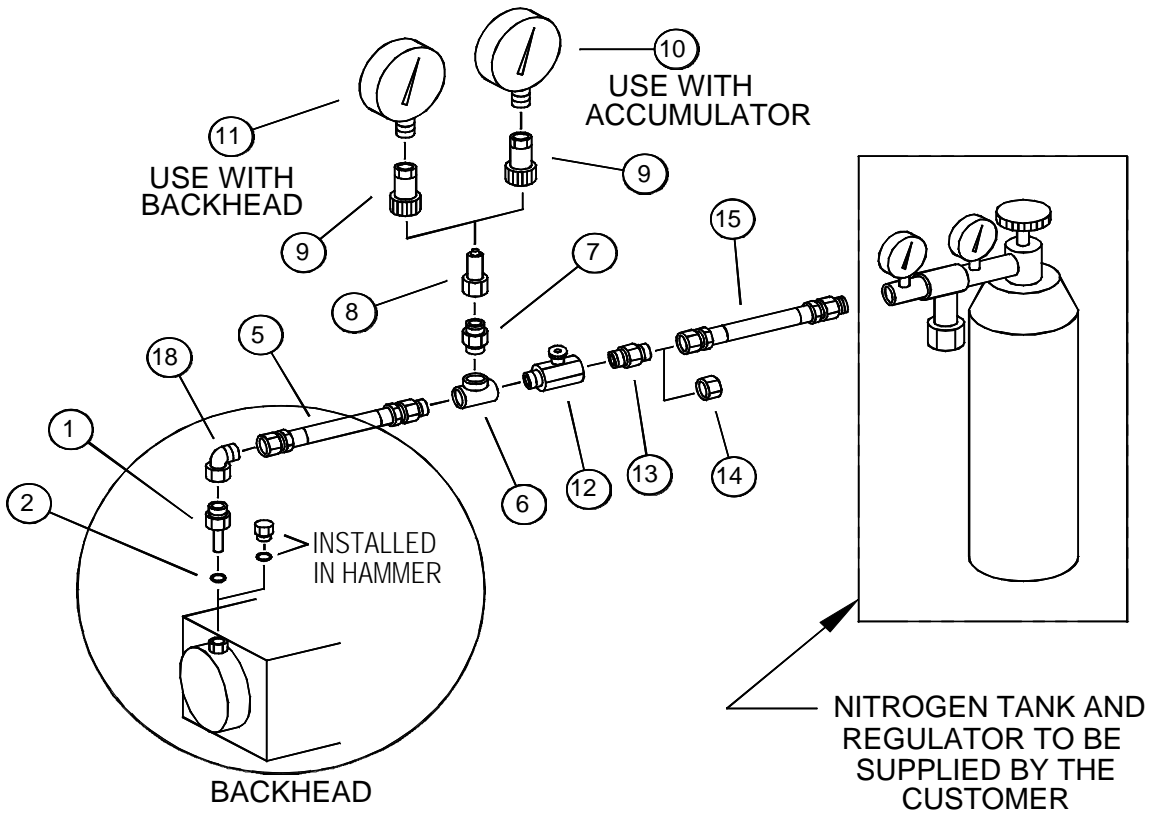
STEP 13 Quickly remove the charge adapter (1) from the charge port. Replace the plug into the charge port.



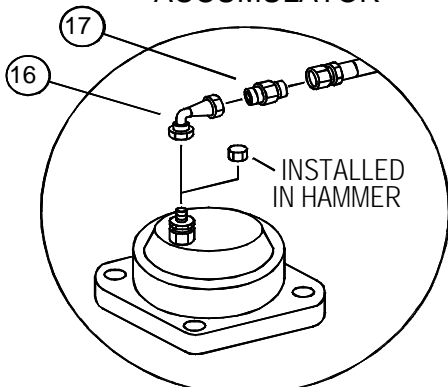
Nitrogen Gas Charging Pressures (Dependent upon AMBIENT Temperature)

Ambient Temperature (Fahrenheit)	Charging Pressure BACKHEAD (P.S.I.)			Charging Pressure ACCUMULATOR (P.S.I.)
	2G	3G to 30G	40G, 50G	All Models
100	39 - 52	89 - 106	131 - 154	732 - 810
90	38 - 51	88 - 104	129 - 151	719 - 796
80	37 - 50	86 - 102	127 - 148	706 - 781
70	36 - 49	85 - 101	125 - 145	693 - 767
60	35 - 48	83 - 99	123 - 142	680 - 753
50	35 - 47	82 - 97	121 - 139	666 - 739
40	34 - 46	80 - 95	119 - 136	653 - 725
30	33 - 45	79 - 93	117 - 133	640 - 710
20	32 - 44	77 - 91	115 - 130	626 - 696
10	31 - 43	76 - 90	113 - 127	613 - 682
0	31 - 42	75 - 88	111 - 124	600 - 668





ACCUMULATOR



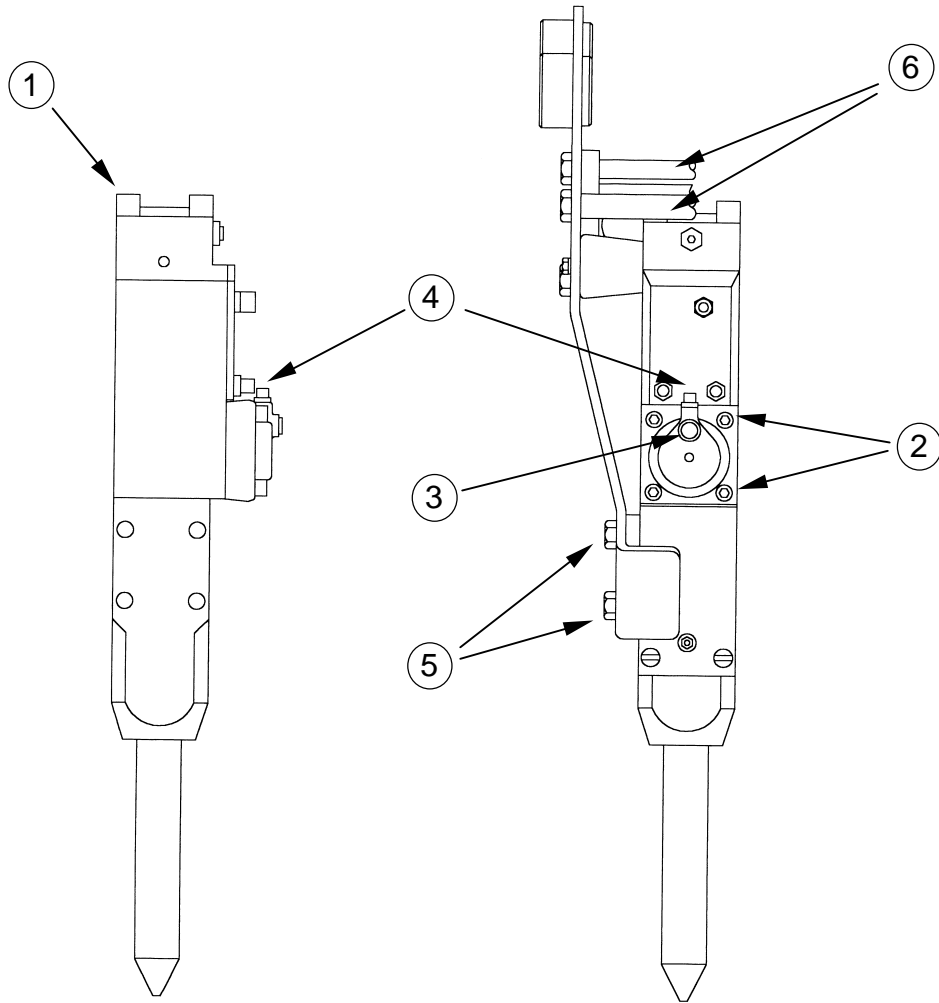
OLD STYLE

CHARGE KIT

PART NO. KBM21805

ITEM	PART NO.	QTY.	DESCRIPTION
1	15587	1	CHARGE KIT ADAPTER
2	3034	1	O-RING
3	15588	1	CHARGE KIT ADAPTER
4	1829	1	O-RING
5	BM-21806	1	HOSE ASSEMBLY
6	8897	1	1/4 NPT FEMALE TEE
7	8977	1	1/4 NPT PIPE NIPPLE
8	15341	1	1/4 NPT Q.D. NIPPLE
9	15340	2	1/4 NPT Q.D. COUPLER
10	15351	1	0-1000 PSI PRESSURE GAUGE
11	15350	1	0-200 PSI PRESSURE GAUGE
12	15348	1	1/4 NPT SHUT OFF VALVE
13	4692	1	1/4 NPT X 4 JIC ADAPTER
14	15339	1	4 JIC CAP
15	BM-21373	1	HOSE ASSEMBLY
16	15331	1	CHARGE ADAPTER
17	15659	1	1/8 NPT X 4 JIC ADAPTER
18	15374	1	4 JIC SWIVEL ELBOW

TORQUE MAINTENANCE LOCATIONS
for KHB1G to KHB8G Hammers



Note: Right-hand side plate has been removed for clarity.



As a general rule, all bolts should be torqued in sets, so that the load is divided equally among any bolts that function as a group. All bolts in that group should first be loosened, and then re-tightened in stages, alternately bringing opposing bolts up to the same torque level, until all bolts in the group share the load equally. Continue in the same way, bringing all bolts in that group up to the final torque level specified.



TORQUE SPECIFICATIONS
KHB1G SUPER II

- | | |
|-------------------------------------|--|
| 1) Through Bolt Hex Nut | Torque: 180 ft-lbs. (25 kg-m)
Every 50 hours of operation |
| 2) Accumulator Mounting Bolt | Torque: 140 ft-lbs. (19 kg-m)
Every 100 hours of operation |
| 3) Accumulator Plug | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 4) Accumulator Cap | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 5) 5/8" - 11 UNRC Stud | Torque: 215 ft-lbs. (29 kg-m)
Every 100 hours of operation |
| 6) 3/4" - 10 UNC Stud | Torque: 215 ft-lbs. (29 kg-m)
Every 100 hours of operation |



TORQUE SPECIFICATIONS
KHB2G SUPER II

- | | |
|-------------------------------------|--|
| 1) Through Bolt Hex Nut | Torque: 220 ft-lbs. (30 kg-m)
Every 50 hours of operation |
| 2) Accumulator Mounting Bolt | Torque: 180 ft-lbs. (25 kg-m)
Every 100 hours of operation |
| 3) Accumulator Plug | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 4) Accumulator Cap | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 5) M20 Stud | Torque: 400 ft-lbs. (55 kg-m)
Every 100 hours of operation |
| 6) 7/8" - 9 UNC Stud | Torque: 250 ft-lbs. (35 kg-m)
Every 100 hours of operation |



TORQUE SPECIFICATIONS
KHB3G SUPER II

- | | |
|-------------------------------------|--|
| 1) Through Bolt Hex Nut | Torque: 220 ft-lbs. (30 kg-m)
Every 50 hours of operation |
| 2) Accumulator Mounting Bolt | Torque: 180 ft-lbs. (25 kg-m)
Every 100 hours of operation |
| 3) Accumulator Plug | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 4) Accumulator Cap | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 5) 7/8" - 9 UNRC Stud | Torque: 250 ft-lbs. (35 kg-m)
Every 100 hours of operation |
| 6) 1" - 8 UNC Stud | Torque: 250 ft-lbs. (35 kg-m)
Every 100 hours of operation |



TORQUE SPECIFICATIONS
KHB5G SUPER II

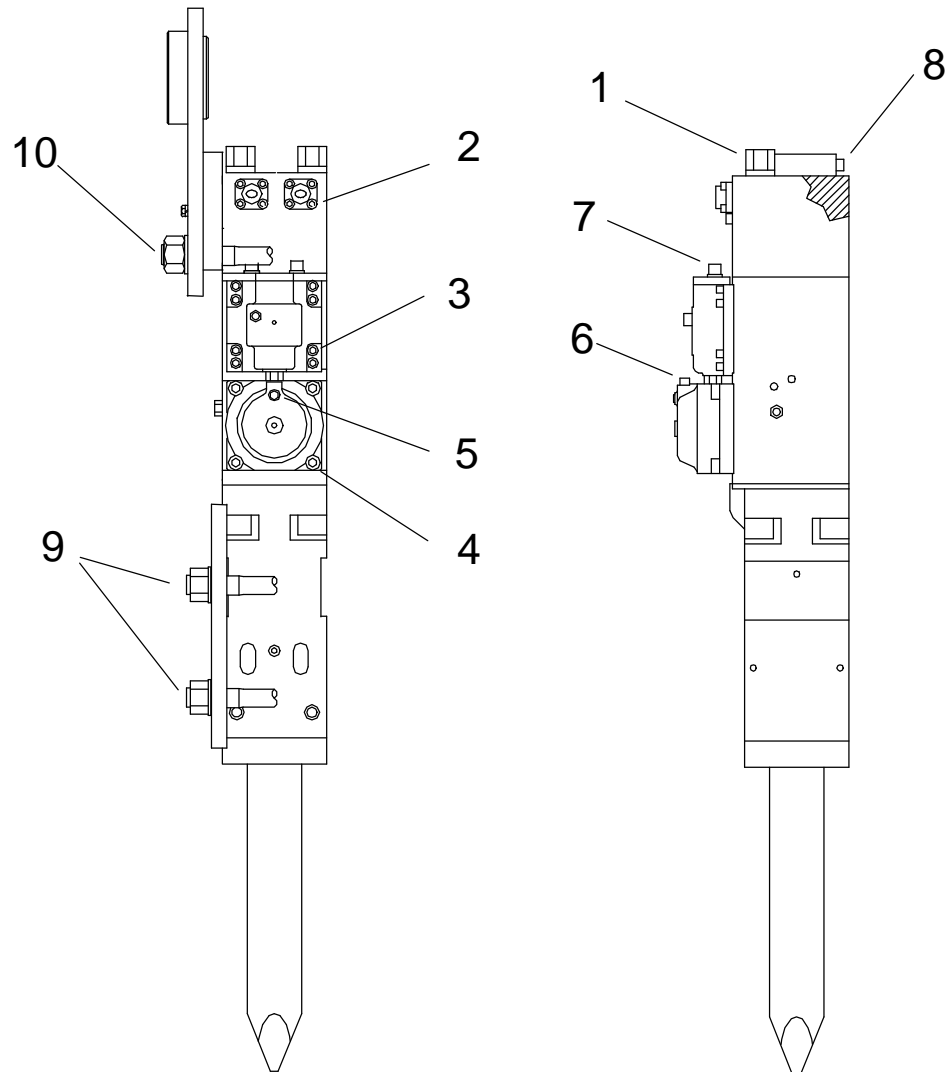
- | | |
|-------------------------------------|--|
| 1) Through Bolt Hex Nut | Torque: 360 ft-lbs. (50 kg-m)
Every 50 hours of operation |
| 2) Accumulator Mounting Bolt | Torque: 180 ft-lbs. (25 kg-m)
Every 100 hours of operation |
| 3) Accumulator Plug | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 4) Accumulator Cap | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 5) 1 1/2"- 12 UNRC Stud | Torque: 600 ft-lbs. (80 kg-m)
Every 100 hours of operation |
| 6) 1" - 8 UNC Stud | Torque: 325 ft-lbs. (45 kg-m)
Every 100 hours of operation |



TORQUE SPECIFICATIONS
KHB8G SUPER II

- | | |
|-------------------------------------|---|
| 1) Through Bolt Hex Nut | Torque: 480 ft-lbs. (66 kg-m)
Every 50 hours of operation |
| 2) Accumulator Mounting Bolt | Torque: 255 ft-lbs. (35 kg-m)
Every 100 hours of operation |
| 3) Accumulator Plug | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 4) Accumulator Cap | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 5) 1 1/2" - 12 UNRC Stud | Torque: 725 ft-lbs. (100 kg-m)
Every 100 hours of operation |
| 6) 1 1/2" - 12 UNC Stud | Torque: 725 ft-lbs. (100 kg-m)
Every 100 hours of operation |

TORQUE MAINTENANCE LOCATIONS
for KHB10G Hammer



Note: Right-hand side plate has been removed for clarity.



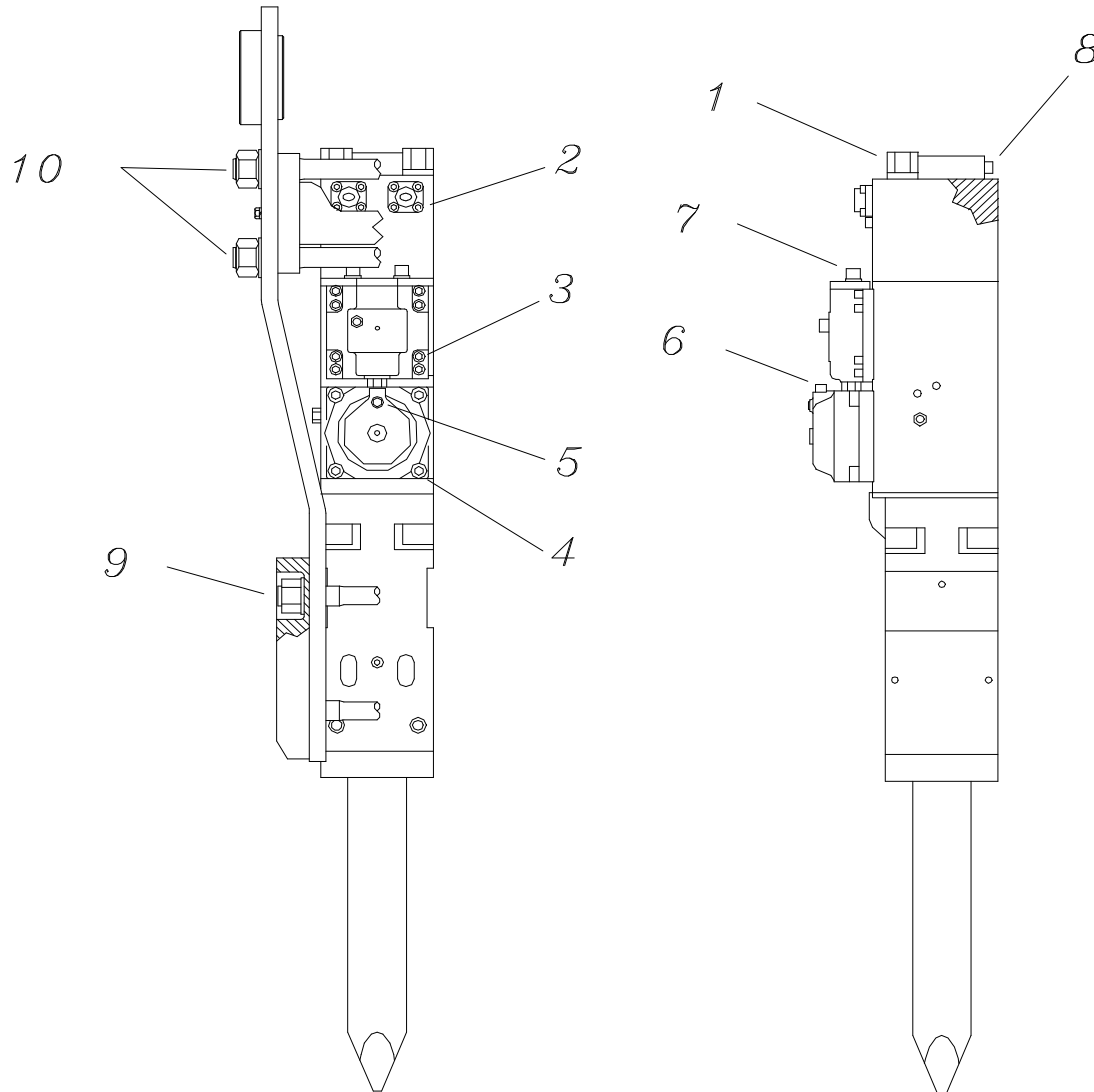
As a general rule, all bolts should be torqued in sets, so that the load is divided equally among any bolts that function as a group. All bolts in that group should first be loosened, and then re-tightened in stages, alternately bringing opposing bolts up to the same torque level, until all bolts in the group share the load equally. Continue in the same way, bringing all bolts in that group up to the final torque level specified.



TORQUE SPECIFICATIONS **KHB-10G SUPER II**

- | | |
|---|--|
| 1) Through Bolt Hex Nut | Torque: 870 ft-lbs. (120 kg-m)
Every 50 hours of operation |
| 2) Flange Adapter Mounting Bolt | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 3) Valve Housing Mounting Bolt | Torque: 250 ft-lbs. (35 kg-m)
Every 100 hours of operation |
| 4) Accumulator Cover Mounting Bolt | Torque: 435 ft-lbs. (60 kg-m)
Every 100 hours of operation |
| 5) Accumulator Plug | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 6) Accumulator Cap | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 7) Valve Housing Cover Mounting Bolt | Torque: 325 ft-lbs. (45 kg-m)
Every 100 hours of operation |
| 8) Backhead Plug | Torque: 290 ft-lbs. (40 kg-m)
Every 100 hours of operation |
| 9) 1 1/2" - 12 UNF Stud | Torque: 1230 ft-lbs. (165 kg-m)
Every 100 hours of operation |
| 10) 2" - 12 UNF Stud | Torque: 950 ft-lbs. (130 kg-m)
Every 100 hours of operation |

TORQUE MAINTENANCE LOCATIONS
for KHB10GH and KHB15G Hammers



Note: Right-hand side plate has been removed for clarity.



As a general rule, all bolts should be torqued in sets, so that the load is divided equally among any bolts that function as a group. All bolts in that group should first be loosened, and then re-tightened in stages, alternately bringing opposing bolts up to the same torque level, until all bolts in the group share the load equally. Continue in the same way, bringing all bolts in that group up to the final torque level specified.



TORQUE SPECIFICATIONS **KHB-10GH SUPER II**

- | | |
|---|--|
| 1) Through Bolt Hex Nut | Torque: 870 ft-lbs. (120 kg-m)
Every 50 hours of operation |
| 2) Flange Adapter Mounting Bolt | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 3) Valve Housing Mounting Bolt | Torque: 250 ft-lbs. (35 kg-m)
Every 100 hours of operation |
| 4) Accumulator Cover Mounting Bolt | Torque: 435 ft-lbs. (60 kg-m)
Every 100 hours of operation |
| 5) Accumulator Plug | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 6) Accumulator Cap | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 7) Valve Housing Cover Mounting Bolt | Torque: 325 ft-lbs. (45 kg-m)
Every 100 hours of operation |
| 8) Backhead Plug | Torque: 290 ft-lbs. (40 kg-m)
Every 100 hours of operation |
| 9) 1 1/2" - 12 UNF Stud | Torque: 1800 ft-lbs. (250 kg-m)
Every 100 hours of operation |
| 10) 1 1/2"- 12 UNF Stud | Torque: 1800 ft-lbs. (250 kg-m)
Every 100 hours of operation |

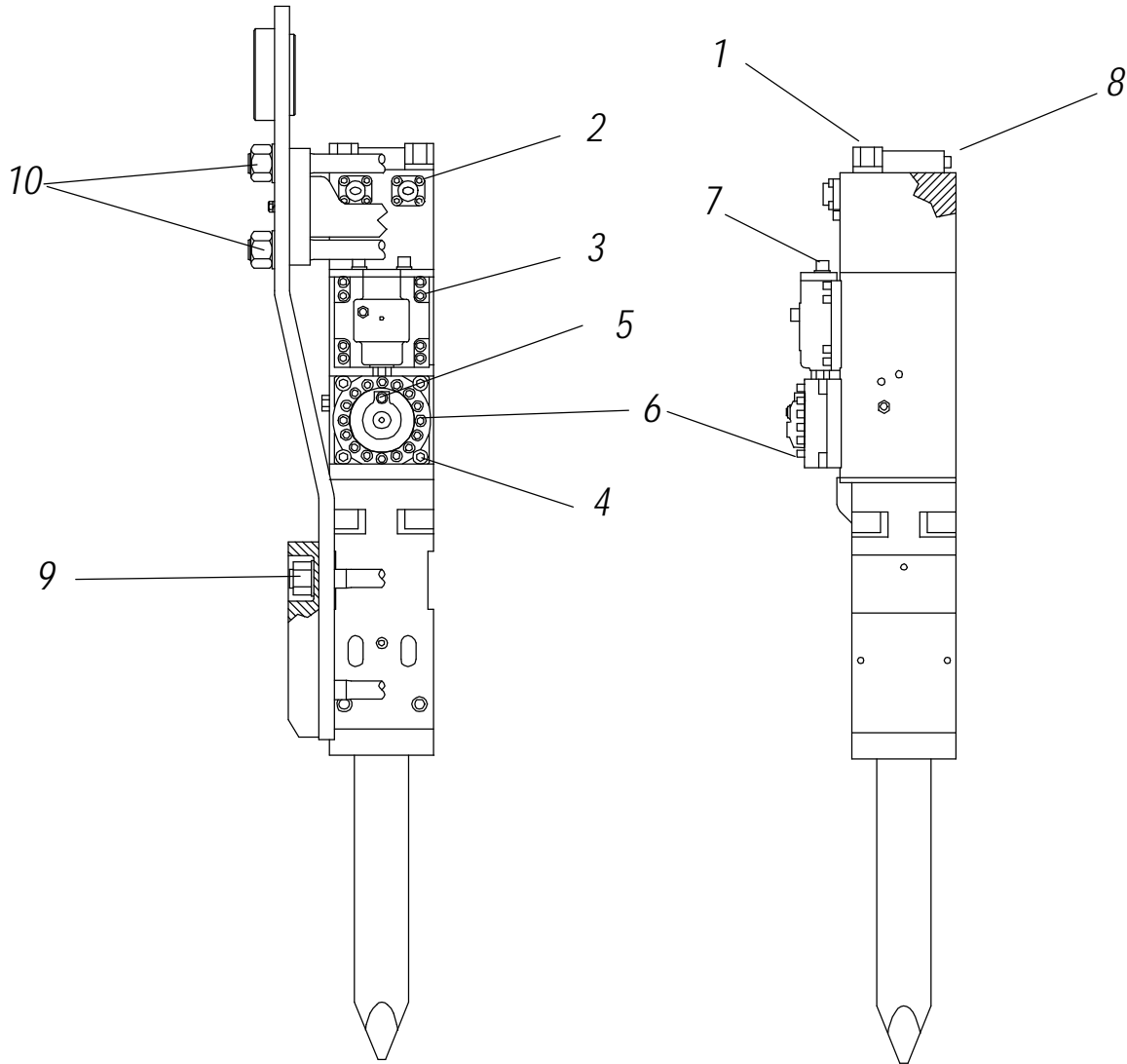


TORQUE SPECIFICATIONS **KHB-15G SUPER II**

- | | |
|---|--|
| 1) Through Bolt Hex Nut | Torque: 1200 ft-lbs. (165 kg-m)
Every 50 hours of operation |
| 2) Flange Adapter Mounting Bolt | Torque: 145 ft-lbs. (20 kg-m)
Every 100 hours of operation |
| 3) Valve Housing Mounting Bolt | Torque: 290 ft-lbs. (40 kg-m)
Every 100 hours of operation |
| 4) Accumulator Cover Mounting Bolt | Torque: 500 ft-lbs. (70 kg-m)
Every 100 hours of operation |
| 5) Accumulator Plug | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 6) Accumulator Cap | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 7) Valve Housing Cover Mounting Bolt | Torque: 500 ft-lbs. (70 kg-m)
Every 100 hours of operation |
| 8) Backhead Plug | Torque: 290 ft-lbs. (40 kg-m)
Every 100 hours of operation |
| 9) 1 1/2" - 12 UNC Stud | Torque: 1800 ft-lbs. (250 kg-m)
Every 100 hours of operation |
| 10) 1 1/2"- 12 UNRC Stud | Torque: 1800 ft-lbs. (250 kg-m)
Every 100 hours of operation |



TORQUE MAINTENANCE LOCATIONS
for KHB20G and KHB50G Hammers



Note: Right-hand side plate has been removed for clarity.



As a general rule, all bolts should be torqued in sets, so that the load is divided equally among any bolts that function as a group. All bolts in that group should first be loosened, and then re-tightened in stages, alternately bringing opposing bolts up to the same torque level, until all bolts in the group share the load equally. Continue in the same way, bringing all bolts in that group up to the final torque level specified.



TORQUE SPECIFICATIONS **KHB-20G SUPER II**

- | | |
|---|--|
| 1) Through Bolt Hex Nut | Torque: 1800 ft-lbs. (250 kg-m)
Every 50 hours of operation |
| 2) Flange Adapter Mounting Bolt | Torque: 180 ft-lbs. (25 kg-m)
Every 100 hours of operation |
| 3) Valve Housing Mounting Bolt | Torque: 290 ft-lbs. (40 kg-m)
Every 100 hours of operation |
| 4) Accumulator Mounting Bolt | Torque: 500 ft-lbs. (70 kg-m)
Every 100 hours of operation |
| 5) Accumulator Cap & Plug | Torque: 110 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 6) Accumulator Assembly Bolt | Torque: 225 ft-lbs. (30 kg-m)
Every 100 hours of operation |
| 7) Valve Housing Cover Mounting Bolt | Torque: 500 ft-lbs. (70 kg-m)
Every 100 hours of operation |
| 8) Backhead Plug | Torque: 290 ft-lbs. (40 kg-m)
Every 100 hours of operation |
| 9) 1 7/8"-8 UNC Stud | Torque: 3200 ft-lbs. (440 kg-m)
Every 100 hours of operation |
| 10) 2"-8 UNRC Stud | Torque: 3200 ft-lbs. (440 kg-m)
Every 100 hours of operation |



TORQUE SPECIFICATIONS **KHB-30G SUPER II**

- | | |
|---|--|
| 1) Through Bolt Hex Nut | Torque: 2530 ft-lbs. (350 kg-m)
Every 50 hours of operation |
| 2) Flange Adapter Mounting Bolt | Torque: 145 ft-lbs. (20 kg-m)
Every 100 hours of operation |
| 3) Valve Housing Mounting Bolt | Torque: 250 ft-lbs. (35 kg-m)
Every 100 hours of operation |
| 4) Accumulator Mounting Bolt | Torque: 760 ft-lbs. (105 kg-m)
Every 100 hours of operation |
| 5) Accumulator Cap & Plug | Torque: 100 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 6) Accumulator Assembly Bolt | Torque: 250 ft-lbs. (35 kg-m)
Every 100 hours of operation |
| 7) Valve Housing Cover Mounting Bolt | Torque: 250 ft-lbs. (35 kg-m)
Every 100 hours of operation |
| 8) Backhead Plug | Torque: 290 ft-lbs. (40 kg-m)
Every 100 hours of operation |
| 9) 1 7/8"-8 UNC Stud | Torque: 3200 ft-lbs. (440 kg-m)
Every 100 hours of operation |
| 10) 2"-8 UNRC Stud | Torque: 3200 ft-lbs. (440 kg-m)
Every 100 hours of operation |



TORQUE SPECIFICATIONS **KHB-40G SUPER II**

- | | |
|---|--|
| 1) Through Bolt Hex Nut | Torque: 3255 ft-lbs. (450 kg-m)
Every 50 hours of operation |
| 2) Flange Adapter Mounting Bolt | Torque: 145 ft-lbs. (20 kg-m)
Every 100 hours of operation |
| 3) Valve Housing Mounting Bolt | Torque: 250 ft-lbs. (35 kg-m)
Every 100 hours of operation |
| 4) Accumulator Mounting Bolt | Torque: 760 ft-lbs. (105 kg-m)
Every 100 hours of operation |
| 5) Accumulator Cap & Plug | Torque: 100 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 6) Accumulator Assembly Bolt | Torque: 250 ft-lbs. (35 kg-m)
Every 100 hours of operation |
| 7) Valve Housing Cover Mounting Bolt | Torque: 250 ft-lbs. (35 kg-m)
Every 100 hours of operation |
| 8) Backhead Plug | Torque: 290 ft-lbs. (40 kg-m)
Every 100 hours of operation |
| 9) 1 7/8"-8 UNC Stud | Torque: 3200 ft-lbs. (440 kg-m)
Every 100 hours of operation |
| 10) 2"-8 UNRC Stud | Torque: 3200 ft-lbs. (440 kg-m)
Every 100 hours of operation |

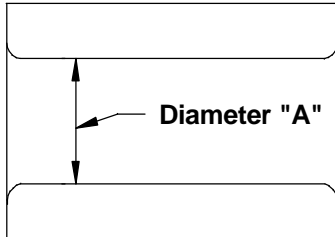


TORQUE SPECIFICATIONS **KHB-50G SUPER II**

- | | |
|---|--|
| 1) Through Bolt Hex Nut | Torque: 3980 ft-lbs. (550 kg-m)
Every 50 hours of operation |
| 2) Flange Adapter Mounting Bolt | Torque: 145 ft-lbs. (20 kg-m)
Every 100 hours of operation |
| 3) Valve Housing Mounting Bolt | Torque: 435 ft-lbs. (60 kg-m)
Every 100 hours of operation |
| 4) Accumulator Mounting Bolt | Torque: 760 ft-lbs. (105 kg-m)
Every 100 hours of operation |
| 5) Accumulator Cap & Plug | Torque: 100 ft-lbs. (15 kg-m)
Every 100 hours of operation |
| 6) Accumulator Assembly Bolt | Torque: 445 ft-lbs. (60 kg-m)
Every 100 hours of operation |
| 7) Valve Housing Cover Mounting Bolt | Torque: 435 ft-lbs. (60 kg-m)
Every 100 hours of operation |
| 8) Backhead Plug | Torque: 290 ft-lbs. (40 kg-m)
Every 100 hours of operation |
| 9) 2"-8 UNC Stud | Torque: 3200 ft-lbs. (440 kg-m)
Every 100 hours of operation |
| 10) 2"-8 UNC Stud | Torque: 3200 ft-lbs. (440 kg-m)
Every 100 hours of operation |

WEAR TOLERANCES

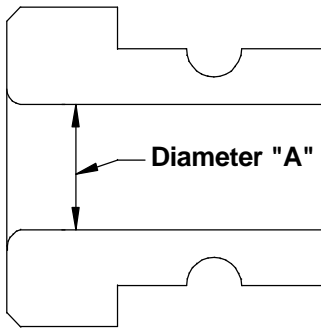
Fronthead Bushing KHB1G to KHB8G



Model	Inside diameter "A" as new part.	Reject limit for diameter "A"
KHB1G	36 mm	38 mm
KHB2G	45 mm	47 mm
KHB3G	60 mm	62 mm
KHB5G	75 mm	79 mm
KHB8G	90 mm	94 mm

→ ← Measure at position 10mm in from outside face end.

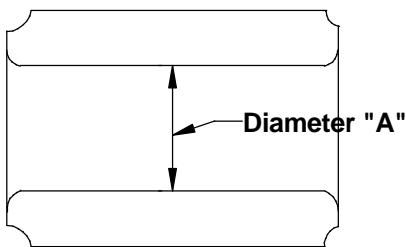
Front Cover KHB10G to KHB50G



Model	Inside diameter "A" as new part.	Reject limit for diameter "A"
KHB10G	105 mm	111 mm
KHB15G	120 mm	126 mm
KHB20G	135 mm	141 mm
KHB30G	150 mm	158 mm
KHB40G	160 mm	168 mm
KHB50G	180 mm	188 mm

→ ← Measure at position 10mm in from outside face end.

Thrust Bushing KHB10G to KHB50G



Model	Inside diameter "A" as new part.	Reject limit for diameter "A"
KHB10G	105 mm	111 mm
KHB15G	120 mm	126 mm
KHB20G	135 mm	143 mm
KHB30G	150 mm	158 mm
KHB40G	160 mm	170 mm
KHB50G	180 mm	190 mm

↑ Measure at a point at center of bushing.



TROUBLE SHOOTING GUIDE

If a problem occurs with the breaker, it is important to first get a flow and pressure reading of the breaker circuit. To do this, plumb a flow meter and pressure gauge into the pressure line going to the breaker, locate them as close to the breaker as possible. Once the readings are taken, refer to the following list of problems and possible causes:

<u>Condition</u>	<u>Problem</u>	<u>Remedy</u>
Does not hammer...	Control valve does not operate.	Check connections between foot switch and valve solenoid.
	Supply hoses have been reversed.	Pressure line from pump must be connected to port marked "IN". The return line connects to port marked "OUT".
	Oil flow is not sufficient to cycle hammer.	Flow test pump circuit. Replace or repair pump, Adjust hammer valve.
	Operating pressure not sufficient to cycle hammer.	Check and/or adjust relief settings. Adjust hammer valve. Adjust backhead gas pressure.
	Supply hoses collapsed, plugged, or leaking.	Replace hose.
	Backhead pressure too high.	Adjust pressure for ambient temperature.
	Backhead chamber filled with oil.	Replace all hammer seals.
	Shuttle valve stuck.	Disassemble and clean all valve ports. Replace worn valve.
	Quick disconnects are faulty	Check Q.D. connectors and replace as needed.
	Screw couplings are faulty	Check fillings and replace as needed.



Continued...

Condition

Hammer is slow or erratic...

Problem

Hydraulic oil temperature is too high.

Low oil flow or pressure.

Too little down pressure between steel and material.

Accumulator pressure too high.

Backhead gas charge too high.

Too much grease in fronthead.

Steel is galled or sticking.

Working steel is not fully engaged.

Working steel does not stay engaged, or extends under load.

Remedy

Oil temperature should not exceed 170°F. If an oil cooler needs to be installed, an inline accumulator is needed to protect cooler.

Test and repair hydraulic system. Adjust hammer valve. Adjust backhead pressure.

Increase down pressure, or reposition carrier closer to work.

Adjust pressure to specification.

Adjust backhead gas pressure for ambient temperature range.

Remove steel, and clean fronthead cavity. Do not over-grease.

Hammer should be greased every 2 to 3 hours of operation. Grease the fronthead with hammer upright, and steel engaged fully.

Use correct down pressure. Be sure the steel and front cover are not worn, and have been properly greased.

Check backhead pressure, and carrier oil pressure. Adjust to specifications.

Continued...



Continued...

<u>Condition</u>	<u>Problem</u>	<u>Remedy</u>
Hammering is weak...	Insufficient oil flow.	Adjust control valve to rated specifications.
	Operating pressure is low	Check the pump and pressure relief valve.
	Oil is contaminated, discolored, or cloudy in appearance	Change hydraulic oil, and filters.
	Oil level is low	Refill to proper levels.
	Return line back pressure is too high	Check filter and hose connections.
	Backhead pressure is too low	Check gas pressure and recharge as needed.
	Filter element is clogged.	Clean or replace.
	Excessive amounts of oil are leaking out from chuck area. Oil flows off end of working steel.	Replace seal kit if oil consumption is greater than 1 pint per hour.
Pressure hose shakes or vibrates excessively...	Accumulator pressure is low.	Recharge with nitrogen gas to specifications.
	Diaphragm is torn or damaged.	Replace diaphragm, and charge with nitrogen gas to specifications.
	Shuttle valve is warped or deformed.	Replace valve shuttle.

- If the cause of the problem still cannot be isolated, contact your Kent distributor for additional assistance.

